REMARKS

Status of claims

Claims 1, 3-7, 9-22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,182,641 to Diner et al. (hereinafter referred to as "Diner") in view of U.S. Pat. No. 5,729,471 to Jain et al (hereinafter referred to as "Jain").

Claim 1

Independent claim 1has been amended to more clearly express the rendering of the coverage area covered by the sensory device. Claim 1 as amended now recites a method for dynamic sensor placement that comprising positioning at least one sensory device in a scene of a 3D site model supported in a computer. The 3D site model includes data defining a plurality of surfaces in three dimensions making up a plurality of objects in the site model. Then method further comprises rendering in the computer an image of at least part of the scene of the 3D site model in which at least part of a coverage of the at least one sensory device within the scene of the 3D site model is displayed, and part of the scene of the 3D site model outside the coverage is displayed. The coverage is derived in accordance with sensor parameters associated with the at least one sensory device. The rendering of the image is derived for a view point in the 3D site model that is different from the positioning of the sensory device. The rendering step renders the coverage of the sensor in accordance with the sensor parameters such that surfaces in the 3D site model in the image have a texture that differentiates the coverage from the part of the scene that is not in the coverage. The surfaces in the image are disposed in the site model at a plurality of different respective three dimensional orientations.

The cited references do not disclose or suggest the claimed combination.

Diner teaches a system for viewing a graphical image of a workspace with at least one monitor and one or more cameras in it. See Diner, Col. 1, lines 65-68 and Col. 2, lines 1-13. Diner teaches depicting a "cone of view" (Diner, Col. 6, lines 17-20), or region of focus (Diner, Col. 2, lines 49-55) of a camera using hatch marks (Diner, Col. 6, lines 34-39), but not does not teach or suggest rendering the coverage area of a sensor such that three-dimensional surfaces of in a 3D site model have a texture that differentiates the coverage area from the part of the scene that is not in the coverage area.

Looking at Diner FIG. 2, the only surface that could be argued to be given an indication of coverage is the dotted ellipse on the floor of the room illustrated. This ellipse is the intersection of the cone 32 of camera 13 with the floor plane. There are no three-dimensionally oriented surfaces having a texture indicating coverage, as required by claim 1. The robot arm 11a is shown as part of the model, but the cone of view 32 cuts through it, and it does not have any indication on it of what part of the robot arm is inside the cone or outside the cone 32.

Jain teaches a three-dimensional video database, or model of a scene wherein a user is able to select and view video images of selected objects depicted in the model (Jain, Col. 2, lines 50-55). Assuming that there were some motivation to combine Jain with Diner, Jain also does not show or suggest a texture applied to three-dimensionally oriented surfaces to show coverage by a sensory device. Jain seems to have a 3D model in which the general direction that cameras are pointed is shown. See FIG. 11a and 14b. However, this type of directional guide is not as informative as the image of the method of claim 1, which identifies the three-dimensionally oriented surface or surfaces that the sensory device is actually covering.

The Jain and Diner references therefore, alone or even in the Examiner's argued combination, fail to teach or suggest all of the features of the invention of claim 1, and reconsideration of the rejection thereof is respectfully requested.

Dependent claims 3 to 6 and 28

Claims 3 to 6 and 28 depend from claim 1 as amended, and therefore distinguish therewith over the prior art.

In addition, the Examiner's attention is particularly drawn to claim 6, which provides for a texture indication an absence of coverage when there is an occlusion of a surface from the sensory device. This feature is also completely absent from Diner or Jain, and further distinguishes over those references.

Diner FIG. 2 shows the ellipse of intersection of the camera viewing cone 32 with the floor of the robot work room. However, it is clear that the robots 11 and 12 (assuming *arguendo* that they are in any way part of a model of the room) do not occlude this cone. Rather, the cone of view 32 goes right through the robots, and apparently looks at the floor through the robot 11. This indicates both the lack of a 3D model in Diner, and also the absence of any occlusion of the view of the camera 13.

Jain shows only the general direction that cameras are pointed, and there is no texture that shows areas in the model that are occluded from the view of the cameras.

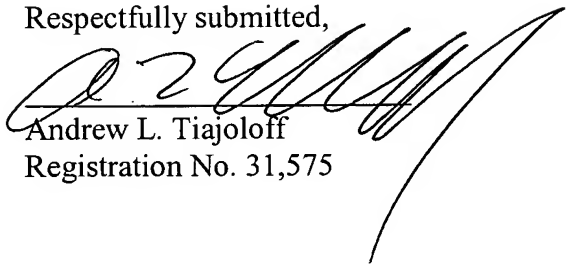
Other claims

Independent claims 7, 13, 17, and 20 have here been amended similarly to claim 1, and distinguish over the cited references for similar reasons, together with their dependent claims 9 to 12, 14-16, 18, 19, 21, 22, 23 to 27, and 29 to 31.

All objections of the Examiner having been herein addressed, and all claims having been shown to distinguish over the prior art in structure, function and result, formal allowance is respectfully requested.

Should any questions arise, the Patent Office is invited to telephone attorney for applicants at 212-490-3285. Attorney for applicants also wishes to express interest in conducting an interview as to any issues that the Examiner feels are not resolved by this response.

Respectfully submitted,



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